

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of removing a particle from a surface of a metal plug formed in a via comprising:
introducing a first agent to a metal layer over the metal plug;
polishing the metal layer with the first agent; and
while polishing the metal layer with the first agent, ~~rinsing~~ introducing a second agent comprising hydrogen peroxide onto a surface of the metal plug through a polisher; ~~with a second agent comprising hydrogen peroxide~~,
wherein ~~the second agent is introduced through a polisher or sprayed over the surface of the metal plug to drive polishing the surface of the metal plug with the second agent, wherein polishing includes driving at least one particle off the surface of the metal plug.~~
2. (Previously Presented) The method of claim 1, wherein polishing the metal layer comprises polishing a metal material selected from the group consisting of tungsten, aluminum and copper.
3. (Original) The method of claim 1, wherein polishing the metal layer comprises polishing with the first agent having an abrasive material selected from the group consisting of silica, alumina, zirconia, and ceria.
4. (Currently Amended) The method of claim 1, wherein polishing the metal layer comprises chemical mechanical polishing.
5. (Cancelled)
6. (Currently Amended) The method of claim 1, wherein introducing the second agent comprises introducing a second agent of approximately 4% by volume ~~or less of~~ hydrogen peroxide.
7. (Cancelled)

8. (Original) The method of claim 1, wherein polishing the metal layer with the second agent includes polishing with a polisher operating at a polishing pressure approximately in the range of 0.5 to 2.0 psi.
9. (Currently Amended) A method of removing at least one particle from a surface of a metal plug disposed over a substrate comprising:
depositing a slurry onto a metal layer over the metal plug;
polishing the metal layer; and
after polishing the metal layer, rinsing-spraying a solution comprising hydrogen peroxide onto the surface of the metal plug;
~~with a solution comprising hydrogen peroxide, wherein rinsing is spraying the solution over the surface of the metal plug to drive~~wherein spraying includes driving at least one particle off the surface of the metal plug with the solution.
10. (Original) The method of claim 9, wherein polishing the metal layer comprises polishing a metal material selected from the group consisting of tungsten, copper, and aluminum.
11. (Original) The method of claim 9, wherein depositing the slurry further comprises depositing a slurry having an abrasive material selected from the group consisting of silica, alumina, zirconia, and ceria.
12. (Cancelled)
13. (Currently Amended) The method of claim 9, wherein ~~rinsing the metal plug comprises rinsing with the solution which comprises approximately 4% by volume or less of hydrogen peroxide.~~
14. (Original) The method of claim 9, wherein polishing the metal layer includes removing the metal layer at a rate of approximately in the range of 40Å/minute to 80Å/minute.
15. (Currently Amended) The method of claim 9, wherein polishing the metal layer comprises chemical mechanical polishing.

16. (Currently Amended) The method of claim 9, wherein polishing the metal layer comprises polishing with a polisher at a polishing pressure approximately in the range of 0.5 to 2.0 psi.
17. (Original) The method of claim 16, wherein the metal layer is removed at a rate of 60Å/minute.
18. (Currently Amended) A method comprising:
polishing a metal layer over a conductive plug with a slurry;
while polishing the metal layer, ~~introducing spraying~~ a rinsing solution ~~comprising hydrogen peroxide through a polisher or by spraying the rinsing solution~~ onto the conductive plug;
~~to drive wherein spraying includes driving at least one particle off the a surface of the metal conductive plug with the rinsing solution; and~~
~~the rinsing solution comprising hydrogen peroxide.~~
19. (Previously Presented) The method of claim 18, further including polishing the metal layer with an abrasive material.
20. (Currently Amended) The method of claim 18, wherein ~~introducing spraying~~ a rinsing solution comprises ~~introducing spraying~~ a rinsing solution of approximately 4% by volume ~~or less of~~ hydrogen peroxide.
21. (Previously Presented) The method of claim 18, wherein a polishing pressure in the range of approximately 0.5 to approximately 2.0 psi is applied.
22. (Original) The method of claim 18, wherein a metal layer is removed at a rate of 60Å/minute.
23. (Currently Amended) A method of removing a particle from a surface of a metal plug formed in a via comprising:
introducing a first agent to a metal layer over the metal plug;
polishing the metal layer with the first agent; and

while polishing the metal layer, ~~introducing spraying~~ a second agent ~~consisting of an aqueous solution of comprising~~ hydrogen peroxide ~~to rinse onto~~ the surface of the metal plug,

~~wherein the second agent is introduced through a polisher or sprayed over the surface of the metal plug to drive~~ spraying includes driving at least one particle off the surface of the metal plug with the second agent.

24. (Currently Amended) A method of removing at least one particle from a surface of a metal plug disposed over a substrate comprising:

depositing a slurry onto a metal layer over the metal plug;

polishing the metal layer; and

after polishing the metal layer, ~~rinsing the surface of the metal plug with~~ introducing a solution consisting of an aqueous solution of comprising hydrogen peroxide, ~~wherein rinsing is spraying the solution over the surface of the metal plug through a polisher;~~

~~to drive~~ rinsing the surface of the metal plug with the solution, wherein rinsing includes driving at least one particle off the surface of the metal plug with the solution and the polisher.

25. (Currently Amended) A method comprising:

polishing a metal layer over a conductive plug with a slurry;

while polishing the metal layer, introducing a rinsing solution comprising hydrogen peroxide onto the conductive plug through a polisher,

~~wherein the second agent is introduced through a polisher or sprayed over the surface of the conductive plug to drive~~ introducing includes driving at least one particle off the a surface of the metal conductive plug using the rinsing solution, the rinsing solution consisting of an aqueous solution of hydrogen peroxide.

26. (Currently Amended) A method of removing a particle from a surface of a metal plug formed in a via comprising:

introducing a first agent to a metal layer over the metal plug;

polishing the metal layer with the first agent; and

while polishing the metal layer, introducing a second agent consisting essentially of hydrogen peroxide ~~to rinse~~ and water onto the surface of the metal plug,

~~wherein the second agent is introduced~~ introducing includes one of spraying the second agent onto the surface and introducing the second agent onto the surface through a polisher ~~or sprayed over the surface of the metal plug to;~~ and drive ~~wherein introducing includes driving~~ at least one particle off the surface of the metal plug with the second agent.

27. (Currently Amended) A method of removing at least one particle from a surface of a metal plug disposed over a substrate comprising:

depositing a slurry onto a metal layer over the metal plug;

polishing the metal layer; and

after polishing the metal layer, ~~rinsing the surface of the metal plug with~~ introducing a solution consisting essentially of hydrogen peroxide and water onto, ~~wherein rinsing is spraying the solution over the surface of the metal plug to drive at least one particle off the surface of the metal plug.~~

wherein introducing includes one of spraying the solution onto the surface and introducing the solution onto the surface through a polisher, and

wherein introducing includes driving at least one particle off the surface with the solution.

28. (Currently Amended) A method comprising:

polishing a metal layer over a conductive plug with a slurry; and

while polishing the metal layer, introducing a rinsing solution onto the conductive plug, the rinsing solution consisting essentially of hydrogen peroxide and water,

wherein introducing includes one of spraying the solution onto the conductive plug and introducing the solution onto the conductive plug through a polisher;

~~wherein the second agent is introduced through a polisher or sprayed over the surface of the metal plug to drive~~ wherein introducing includes driving at least one particle off the a surface of the metal conductive plug with the solution.